39 which distributes the fluid to the annular ring jet 33. The control body 17 forms a throat 35 which may be large enough to permit passage of a guide wire through the throat area. Although the slits in each embodiment differ in detail each preferably has a characteristic length which is larger than the corresponding width. However due to manufacturing considerations rows of round holes may be substituted for the slit shown in the figures. It should also be noted that the complex body contours can be approximated by more easily manufactured conical sections --.

In the Claims

Kindly cancel the claims 1-10 in the application as originally filed and substitute these claims which are numbered from the highest number in the previous prosecution.

11 ~~18~~. A catheter system comprising:

an ablation catheter having a catheter body said catheter body having a distal tip said distal tip having a first maximal diameter;

a sheath having a internal diameter substantially equal to said first diameter of said ablation catheter;

said ablation catheter located within said sheath and adapted for motion with respect to said sheath;

whereby said ablation catheter can be moved independently of said sheath.

12 ~~19~~. A catheter system according to claim 18 wherein said internal diameter of said sheath is slightly larger than said first diameter of said ablation catheter.

13 ~~20~~. A catheter system according to claim 18 wherein said internal diameter of said

sheath is substantially equal to said first diameter of said ablation catheter.

14 ~~21~~. A catheter comprising:

a catheter body having a proximal end and having a distal end;

said catheter body defining an axis;

said distal end having an approximately circular cross section;

a high pressure lumen in said catheter body terminating near the distal end;

a3 an annular aperture encircling the distal end of the catheter body, connecting the high pressure lumen with the exterior surface of said catheter body;

said annular aperture defining a first aperture direction for the emerging flow that lies between approximate zero degrees and one hundred and eighty degrees

said annular aperture cooperating with said catheter body to direct an annular sheet of fluid emerging from said aperture along said catheter body such that said distal end is substantially encircled with fluid from said aperture.

15 ~~22~~. The catheter of claim 21 wherein said annular aperture is formed by a set of individual holes.

16 ~~23~~. The catheter of claim 22 wherein said set of individual holes are substantially equidistant around the periphery of said distal end of said catheter.

17 ~~24~~. The catheter of claim 23 wherein said holes are approximately round in cross section.

18 ~~25~~. The catheter of claim 23 wherein said holes are approximately rectangular in cross

section.

19 26. The catheter of claim 21 further including :

a control body surface located immediate adjacent said aperture, providing a barrier located proximate said aperture, for limiting fluid entrainment from the location of said control body, near the aperture by the jet emerging from the aperture, whereby said jet is deflected by a pressure difference across said barrier.

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20 27. A catheter comprising:

a catheter body having a proximal end and having a distal end;

a high pressure lumen located in said catheter body;

a series of apertures communicating with said high pressure lumen;

said series of aperture substantially completely encircling said distal end;

a control body formed in said catheter body adjacent said series of apertures blocking fluid entrainment from the area proximal of said apertures by a jet emerging from said apertures.

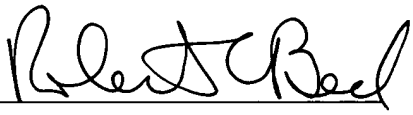
21 28. The catheter device of claim 26 wherein a tangent drawn to said control body surface at the location of the aperture is parallel to the aperture direction.

22 29. The catheter device of claim 26 wherein a tangent drawn to said control body surface at the location of the aperture forms an included angle with the aperture direction that is greater than zero degrees and less than ninety degrees.

cont

ROBERT C. BECK
By his attorneys:

Date: 8-10-00



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